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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/742,283

12/22/2000

Stefan Parkvall

2380-289

8178

7590

01/25/2005

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EXAMINER

SEFCHECK, GREGORY B

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/742,283

Applicant(s)

PARKVALL ET AL.

Examiner

Gregory B Sefcheck

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8-18, 21-28, 30-32, 34-43 and 46-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-18, 21-28, 30-32, 34-43 and 46-50 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 21, 30, and 46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

- Applicant's Amendment filed 9/7/2004 is acknowledged.
- Claims 6, 7, 19, 20, 29, 33, 44, and 45 are cancelled.
- Claims 1-5, 8-18, 21-28, 30-32, 34-43, and 46-50 remain pending.

### ***Claim Objections***

1. Claims 8, 9, 21, 30, and 46 are objected to because of the following informalities:

Claims 8, 9, 21, 30, and 46 depend from claims that have been cancelled in the present amendment. In order to expedite prosecution, the dependency of the claims will be assumed as follows:

- Claims 8 and 9 depend from claim 1.
- Claim 21 depends from claim 14.
- Claim 30 depends from claim 26.
- Claim 46 depends from claim 42.

A formal amendment clarifying the dependency of these claims is required in the next communication from the Applicant.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 10, 11, 14, 16, 26-28, 31, 34, 35, 38, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labonte et al. (US005991286A), hereafter Labonte, in view of Neumiller et al. (US006226283B1), hereafter Neumiller.

- In regards to Claims 1-4, 10, 11, 14, 16, 26-28, 31, 34, 35, 38, 39, and 41, Labonte discloses a method and cellular system for communicating data packets between a base station and a mobile user over uplink and downlink channels (Figs. 1A-C; claim 1,14,26,38,39 – method and units in mobile radio system where data packets are communicated from first node to second node/between one or more base stations and wireless user units over first channel and feedback signal is sent from second node to first node over a second channel).

Referring to Fig. 3, Labonte shows a signal quality measurement is made of both the uplink and downlink channels at the base station and/or mobile station (Col. 7, lines 32-45; claim 1,14,26,39 – first node detector determines condition/signal quality of second channel/uplink; claim 3,16,28,41 – first node detector to determine condition/signal quality of first channel/downlink; claim 10,11,34,35 – first node is a base station/wireless unit in a radio communications network and second is a wireless

unit/base station; claim 10,11,34,35 – first channel is a downlink/uplink and the second channel is an uplink/downlink).

A determination is made as to whether the signal quality uplink and downlink is sufficient for packet data communications (Col. 7, lines 50-53; claim 1,2,4,14,26,27,39 – first node controller/scheduler schedules transmission over first channel/downlink based on determined condition of second channel/uplink; claim 3,16,28,41 – first node controls/schedules transmission over first channel/downlink based on determined conditions of first/downlink and second/uplink channels).

Labonte does not explicitly disclose a feedback signal that is an ack signal, negative ack signal or a lost signal corresponding to a data packet transmitted over the first channel. Labonte also does not disclose delaying transmission over the first channel until the quality of the second channel exceeds a threshold.

Neumiller discloses a method of performing selection in a communications system (Title). Neumiller discloses communication from base stations to remote units based upon whether quality indicators adhere to configurable thresholds on the link from the remote units to the base stations. Furthermore, the quality indicators may include forward error correction utilizing the ARQ protocol, employing acknowledge or negative acknowledge feedback signals (Col. 3, lines 1-18; Col. 3-4, lines 65-7; claim 1,14,26,39 – feedback signal is an acknowledge signal, a negative acknowledge signal or a lost signal corresponding to a data packet transmitted over the first channel).

Neumiller shows that the base station is equipped to delay transmission of frames for an amount of time so that frames from base stations in soft handoff with the remote unit are received for determining the best quality indicator (Fig. 2; Col. 5, lines 16-28; claim 1, 14, 26, 39 – first node scheduler delaying transmission over first channel/downlink until quality of second channel/uplink exceeds predetermined threshold).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Labonte by utilizing the ARQ protocol in determining the quality of the communication link between the first and second node and delaying transmission on the first channel until the second channel quality is acceptable, as shown by Neumiller. This modification provides a known protocol for implementing feedback to ensure reliable communications between base stations and remote units in a wireless communications system as well as ensuring continuous downlink communication while a remote unit is involved in soft handover with two base stations, enabling seamless mobile coverage over the entire coverage area of a multiple base station system.

4. Claims 1-5, 8-18, 21-28, 30-32, 34-43, and 46-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garceran et al. (US006522888B1), hereafter Garceran, in view of Neumiller.

- In regards to Claims 1-4, 9-12, 14, 16-18, 21, 22, 26-28, 31, 34-36, 38, 39, 41-43, 46, and 47,

Garceran discloses a method in a wireless radio communication system for communicating data from system controllers and base stations to mobile user over forward- and reverse-link channels (Abstract; claim 1,14,26,38,39 – method and units in mobile radio system where data packets are communicated from first node to second node/between one or more base stations and wireless user units over first channel and feedback signal is sent from second node to first node over a second channel; claim 12,36 – first node is a radio network controller coupled to one or more base stations in a radio network and second node is a wireless user unit).

Garceran shows that the base station could receive and/or determine signal quality measurements of a forward link and/or of a reverse link at a particular location (Abstract; claim 1,14,26,39 – first node detector determines condition/signal quality of second channel/uplink; claim 3,16,28,41 – first node detector to determine condition/signal quality of first channel/downlink; claim 10,11,34,35 – first node is a base station/wireless unit in a radio communications network and second is a wireless unit/base station; claim 10,11,34,35 – first channel is a downlink/uplink and the second channel is an uplink/downlink).

Garceran discloses that the communication between the base station and mobile station is controlled based upon the determined signal quality measurements of the forward- and reverse-link channels (Col. 2, lines 28-34; Col. 3, lines 32-45; claim 1,2,4,14,26,27,31,39 – first node controller/scheduler schedules transmission over first channel/downlink based on whether determined condition of second channel/uplink is sufficient; claim 3,16,28,41 – first node controls/schedules transmission over first channel/downlink based on determined conditions of first/downlink and second/uplink channels).

Garceran does not explicitly show employing the ARQ protocol by the base station to provide reliable communications with the wireless user, where the ARQ feedback is an acknowledge, negative acknowledge or lost signal determined to be sufficient when the probability of reception error is below an error threshold. Garceran also does not explicitly show delaying data transmission over the downlink until the uplink signal quality is sufficient or for a preset period of time, where the wireless user is communicating with two base stations in soft handover.

Neumiller discloses a method of performing selection in a communications system (Title). Neumiller discloses communication from base stations to remote units based upon whether quality indicators adhere to configurable thresholds on the link from the remote units to the base stations. Furthermore, the quality indicators may include forward error correction utilizing the ARQ protocol, employing acknowledge or



negative acknowledge feedback signals (Col. 3, lines 1-18; Col. 3-4, lines 65-7; claim 17,42 – base station employs ARQ protocol to provide reliable communications with wireless user; claim 17,42 – first node determines whether condition/signal quality of second channel/uplink is sufficient for the first node/base station to accurately receive ARQ feedback signal from second node/wireless user; claim 18,43 – the sufficiency of the second channel is determined so that a probability of error in the received ARQ feedback signal is below an error threshold; claim 1,14,26,39 – feedback signal is an acknowledge signal, a negative acknowledge signal or a lost signal corresponding to a data packet transmitted over the first channel).

Neumiller shows that the base station is equipped to delay transmission of frames for an amount of time (Col. 5, lines 22-23; claim 9,21,46 – transmitting data packets after a preset delay period) so that frames from base stations in soft handoff with the remote unit are received for determining the best quality indicator (Col. 5, lines 16-28; claim 1,14,26,39 – first node scheduler delaying transmission over first channel/downlink until quality of second channel/uplink exceeds predetermined threshold; claim 22,47 – wireless user is communicating with two base stations in a soft handover).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Garceran by using the known ARQ protocol for determining the sufficiency of the feedback/uplink signal quality from remote units through an acknowledge, negative acknowledge or lost signal in order to ensure

downlink transmission to the remote units, as shown by Neumiller. This modification provides a known protocol for implementing feedback to ensure reliable communications between base stations and remote units in a wireless communications system.

It would have also been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Garceran by delaying transmission over the downlink until the uplink signal quality is sufficient or for a preset time period when the wireless user is communicating with two base stations in soft handover, as shown by Neumiller. This implementation would ensure continuous downlink communication while a remote unit is involved in soft handover with two base stations, enabling seamless mobile coverage over the entire coverage area of a multiple base station system.

- In regards to Claims 5 and 32,

Garceran discloses a method in a wireless radio communication system for communicating data from base stations to mobile users over forward- and reverse-link channels that covers all limitations of the parent claims.

Garceran shows the signal quality on the forward- and reverse-link channels can be determined based on error rates meeting thresholds (Col. 3, lines 15-67; claim 5,32 – the sufficiency of the second channel is determined so that a probability of error in the received feedback signal is below an error threshold).

- In regards to Claims 13, 23-25, 37, and 48-50,

Garceran discloses a method in a wireless radio communication system for communicating data from base stations to mobile users over forward- and reverse-link channels that covers all limitations of the parent claims.

Garceran shows that transmission control from base station to mobile unit may be controlled based upon conditions other than uplink signal quality, including traffic load at the serving base station and the propagation environment (frequency and speed; Doppler frequency; Col. 3, lines 15-25, 32-45, 50-61; claim 13,23,37,48 – controlling transmission over first channel/downlink without regard to the condition/signal quality of the second channel/uplink when another condition is detected; claim 24,49 – detected condition is when a Doppler frequency of the uplink exceeds a threshold; claim 25,50 – detected condition is when a load of a cell corresponding to the base stations is less than a threshold).

- In regards to Claims 8, 15, 30, and 40,

Garceran v. Neumiller discloses a method in a wireless radio communication system for communicating data from base stations to mobile users over forward- and reverse-link channels that covers all limitations of the parent claims.

Garceran discloses transmission over a downlink that is dependent on uplink signal quality measurements such as signal and interference levels, meeting configurable thresholds (Col. 3, lines 15-67; Col. 5, lines 15-32; claim 8,15,30,40 – predetermined threshold is a signal-to-interference ratio).

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-4, 10, 11, 14, 16, 26-28, 31, 34, 35, 38, 39, and 41 rejected under 35 USC 102(b) as being anticipated over Labonte et al. have been considered but are moot in view of the new ground(s) of rejection.

- The present amendments of independent claims 1, 14, 26, and 39 include additional limitations that are not anticipated by Labonte et al.

6. Applicant's arguments with respect to claims 1-5, 10-14, 16, 23-28, 31, 32, 34-39, 41, and 48-50 rejected under 35 USC 102(e) as being anticipated over Garceran et al. Have been considered but are moot in view of the new ground(s) of rejection.

- The present amendments of independent claims 1, 14, 26, and 39 include additional limitations that are not anticipated by Garceran et al.

7. Applicant's arguments filed 9/7/2004 regarding the claim rejections under 35 USC 103 over Garceran in view of Neumiller have been fully considered but they are not persuasive.

- In the Remarks on pg. 11 of the Amendment, the Applicant contends that there is no teaching in Neumiller of determining the condition of the channel which carries the ARQ feedback. Applicant further contends that the delay

circuitry 205 in Neumiller does not relate to detection of a signal condition of the ARQ channel.

- The Examiner respectfully disagrees. On lines 3-5 of column 4, Neumiller clearly discloses that a FEC function preferably used for determining frame quality indicators may involve an ARQ feedback. The disclosure of Neumiller relied upon by the Examiner assumes the use of this ARQ feedback in determining frame quality indicators on transmission between remote units and base stations, including the use of delay circuitry 205 (Fig. 2), which delays the remote unit data transmissions (first channel) of the data to the IP switch until the base station transmission (second channel) having the best quality indicator is determined through ARQ feedback.
- Both Garceran and Neumiller disclose systems and methods for determining signal quality measurements on communications between remote units and base stations in order to control the transmission of a remote unit in a particular location. It is the opinion of the Examiner that the elements of each reference used in the rejection are relevant to solving the same problem of utilizing the best link for transmission based on signal quality measurements on the forward and reverse links and that the combination of Garceran and Neumiller is proper.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

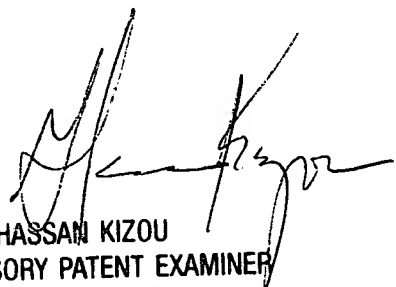
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS  
1-12-2005

  
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